

# TORREYA

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## THE DATES OF RAFINESQUE'S NEW FLORA AND FLORA TELLURIANA

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As far as I am aware, no question has ever been raised concerning the reliability of the dates given on the title-pages of any of the works of Rafinesque. His *Autikon Botanikon*, to be sure, is dated 1815-1840, while no portion of the text was published until 1840; but this text was intended to illustrate an herbarium which the author had accumulated during the years 1815-1840, so that the meaning of the date he gives is manifest.

About a year ago I noticed in the *Flora Telluriana* (4: 27) a brief criticism of Gray's monograph of the Melanthaceae of North America, which was not published until November, 1837;\* and this, of course, showed that Rafinesque's criticism could not have been published earlier than that date. A hurried examination revealed further internal evidence of the erroneous dating of the *Flora Telluriana* and its companion-work, the *New Flora of North America*, but the investigation of the subject was not carried very far at that time.

When the last number of the *North American Flora* was in press, it became necessary for Dr. Small to decide upon the relative priority of *Mesyrium* Raf. ("1836") and *Cathartolinum* Reichenb. (1837), and this led to the study of which the results are here reported.

The *New Flora of North America* was undertaken by Rafinesque as a supplement to the works previously published by others upon the same topic; and as a result of his labors upon

\* GRAY, A. *Melanthacearum Americae Septentrionalis Revisio*. Ann. Lyc. Nat. Hist. N. Y. 4: 105-140. N 1837.

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it, he was led to undertake the preparation of its "sequel," the *Flora Telluriana*, dealing with the plants of the rest of the world. The pages of these two works contain many descriptions of "new genera" of plants, so that the dates of their appearance are of considerable importance. As the books themselves are quite scarce, a brief preliminary account of them may not be out of place.

Each was planned to consist of six "parts" or volumes, but was completed in four. Each of the eight parts is separately paged, and has a separate title-page and subtitle of its own; and each is dated "1836."

#### NEW FLORA AND BOTANY OF NORTH AMERICA

First part. Introduction, Lexicon, Monographs. 100 pages. 1836.

Second part. Neophyton. 96 pages. 1836.

Third part. New Sylva. 96 pages. 1836.

Fourth part. Neobotanon. 112 pages. 1836. (This contained also a general title-page for the entire work, dated 1836.)

#### FLORA TELLURIANA

First part. Introduction and Classification. 103 pages. 1836.

Second part. Centuria I, II, III, IV. 112 pages. 1836.

Third part. Centuries V, VI, VII, VIII. 100 pages. 1836.

Fourth part. Centuries IX, X, XI, XII. 135 pages. 1836.

(This contained also a general title-page for the entire work dated 1836.)

Of these eight parts, the first part of the *New Flora* was the first to appear. It contained a dedication dated at Philadelphia, September, 1836; and pages 73-80 are occupied by a monograph of the genus *Kuhnia*, dated October, 1836. These facts alone are sufficient to make one suspect that perhaps the eight parts were not all issued before the end of that year! There is not lacking other internal evidence on this subject, in addition to the citation of Gray's monograph (*Fl. Tell.* 4 : 27; also *New Fl.* 4 : 103, where the date of "Grey's" paper is distinctly stated as "1837"). *Flora Telluriana*, part 3 (which in turn is cited by

New Fl. 3: 41, 51), on page 57 refers to Bot. Reg. *pl.* 1906 (1 N 1836!); and on page 37 to Bot. Mag. *pl.* 3540 (1 D 1836!), which could not well have reached Philadelphia before the end of the year 1836. Flora Telluriana, part 4 (which in turn is cited by New Fl. 4: 56, 57, 63, 98), on page 124 cites Bot. Reg. *pl.* 1958 (1 My 1837). But, in spite of these references, I know of no *internal* evidence that the two works were not completed before the end of the year 1837.

From internal evidence, too, it is possible to arrange the parts serially, in the order in which they were printed. This may be done by means of the exact citations, by page, of one work by the other; chiefly of the Flora Telluriana by the New Flora. The result is as follows: New Fl. I; Fl. Tell. I; Fl. Tell. II; New Fl. II; Fl. Tell. III; New Fl. III; Fl. Tell. IV; New Fl. IV.

In order to approximate more closely than might otherwise be possible the exact dates of issue of each of these parts, the series of letters written to Torrey by Rafinesque during the years 1836 to 1839, and preserved in the Torrey correspondence at the New York Botanical Garden, was searched, and the search was well rewarded, as is shown by the following quotations:

September 5, 1836.—“I having leisure have resolved to begin to print my New flora of North Amer. by alphabetical order. . . . When this Work is printed, my botanical labors from 1802 to 1836, in America, will be better known.”

December 21, 1836.—“My flora proceeds very slowly & was even suspended awhile for lack of a compositor that could print Botanical terms! . . . I have concluded to close the Lexicon of monographs very abruptly, and give instead selected monographs & my N. Genera & species.”

This shows that only ten days before the close of the year 1836 even the printing of the first part of the New Flora was not completed.

April 18, 1837.—“I wanted to surprise you with a great Botanical Work — my Flora telluriana . . . to which I was led by my New flora of N. Amer., but I could only print 2 parts or volumes. I. Classes & Orders. 2d. 400 N. Gen. my other engags have compelled me to suspend for a while.”

By the middle of April, 1837, then, had been printed one part of the New Flora and two of the Flora Telluriana.

October 24, 1837. — "I am still going on slowly with my New flora of N. America and Flora telluriana at once. . . . I have circulated but few copies of the numbers published, wishing to surprise you and all Botanists when the whole shall be out; but if you wish to see them earlier I may send you 5 numbers of 100 pages 8vo each very soon, and more next March."

From this it appears likely that a second number of the New Flora had appeared when this letter was written, and that a third number of the Flora Telluriana was nearly ready; or else that the two parts were nearly ready to be issued together.

January 10, 1838. — "My New flora or Mantissa begun to print in 1836 is still going on & altho' interrupted by my flora Telluriana & 2 works published this Spring (1. The Universe. — 2. Safe Banking) is proceeding as fast as correct exam. can allow. I wished to issue the whole work together; but I shall be compelled to issue when half is ready 3 numbers of 100 pages as in Flora tellur. My 3d N. on the Trees and Shrubs or a New sylvia is not quite ready."

At the end of 1837, then, three numbers of the Flora Telluriana had been issued, and two of the New Flora, but on January 10, 1838, the third part of the New Flora was "not quite ready."

March 20, 1838. — "I have long ago concluded 600 pages of my Supplemental Flora & Flora Telluriana or 6 parts. If I had not undertaken these 2 works together, the first would have been completed ere now, but will be ere 1840."

The third part of the New Flora had evidently been published since the date of the January letter. It appears that Rafinesque still intended each work to consist of six parts, and for this reason allowed himself until 1840 to complete them.

February 1, 1839. — "My 4th part or Volume of New flora was completed so as to give you time to go on with your flora. I also completed my Flora telluriana in 4 Vol. or 1225 articles. But immed<sup>r</sup> after begun & have concluded last Dec<sup>r</sup> my Synopsis of N. G. & Sp. of Trees & Shrubs of N. Amer."

From this it appears that prior to December, 1838, both the

Flora Telluriana and the New Flora had been completed. The last sentence refers to Rafinesque's *Alsographia Americana*, which was dated 1838, and from his own statement above was probably issued in December of that year.

The extracts from Rafinesque's letters show that few, if indeed any, copies of either the *Flora Telluriana* or the *New Flora* had been actually distributed until three parts of each had been printed (in the spring of 1838); but, as he says in the letter of October 24, 1837, "I have circulated but few copies of the numbers published," we must give him the benefit of the doubt, and assume that he had distributed a few copies.

Rafinesque's *Bulletin of the Historical and Natural Sciences* was an advertising sheet issued by him at irregular intervals from 1834 to 1839. No. 7, dated "Spring of 1838," is devoted chiefly to the two works here under discussion. He says in part: "I had long contemplated to give a *New Flora of North America*. . . . I resolved . . . to add the improvements on Natural classification. These last, however, increased so much under my revision, as to become a work by itself, and a companion rather than addition to our *Flora*. Both works were begun in 1836, and our plants would all have been published by this time, if I had not thus been compelled to double these botanical labors. I once proposed to issue the whole at once when completed, but this delay and others arising from different pursuits and labors, have induced me to publish the parts as soon as printed, and now that 3 parts of each (being half a volume,) are published, I issue this *Bulletin* to acquaint the Botanists of Europe and America with" them. "Each work is to consist of 6 parts of 100 to 120 pages, thus forming a volume large octavo of 600 to 700 pages, which shall be completed in 1840 or sooner. . . . The 6 parts now printed, 3 of each work, will be sold together for \$5."

The dates of the two works under discussion, as nearly as they can be determined from the evidence here submitted, may be summarized as follows:

NEW FLORA	Part	I.	1836 (December).
		II.	1837 (second half).
		III.	1838 (first quarter).
		IV.	1838 (late in year).

- FLORA TELLURIANA. Part I. 1837 (first quarter).  
 II. 1837 (first quarter).  
 III. 1837 (November or December).  
 IV. 1838 (near middle of year).

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## DESCRIPTION OF A NEW TERTIARY FOSSIL FLOWER FROM FLORISSANT, COLORADO

BY ARTHUR HOLLICK

Among the many interesting specimens discovered by Professor Theo. D. A. Cockerell in the Tertiary plant beds at Florissant, Colorado, recently transmitted to me for critical examination, is one which represents a more or less well-preserved flower. Some of its parts are obscure or missing, but those that are preserved

show the general characters of the filaments, anthers, and petals, and, to a lesser extent, those of the calyx also.



FIG. 1. Photograph of *Phenanthera petalifera*,  $1\frac{1}{2}$  times natural size.

It is so seldom that the delicate tissues of petals, filaments and anthers are preserved as fossils, and the known examples of any such are so few, that this specimen is of unusual interest and is worthy of description even though the description must necessarily be incomplete.

### *Phenanthera petalifera* gen. et sp. nov.

Remains consisting of more or less dismembered parts of a small pedunculate, choripetalous flower, which may be allied either to the family Caryophyllaceae or to the order Rosales or to the Myrtales.

Calyx-tube about 4 mm. wide and 5 mm. long, urn-shaped, 4 (?) -divided above the middle, the divisions bearing spatulate appendages (?). Petals spatulate, 2-3 times longer than the divisions of the calyx-tube and alternate with them. Stamens 8,